GARDEN AND FOREST.

PUBLISHED WEEKLY BY

THE GARDEN AND FOREST PUBLISHING CO.

OFFICE: TRIBUNE BUILDING, NEW YORK.

Conducted by . . . . . Professor C. S. SARGENT.

ENTERED AS SECOND-CLASS MATTER AT THE POST-OFFICE AT NEW YORK, N. Y.

NEW YORK, WEDNESDAY, NOVEMBER 14, 1894.

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The Pinetum at Wellesley.

THERE are few large collections of Conifers in this country where the trees have attained an age which enables a student to form a satisfactory idea of their appearance and behavior as they reach or approach maturity. The Pinetum, planted twenty years ago by Josiah Hoopes, in West Chester, Pennsylvania, taken in connection with the trees planted by his father twenty years earlier, is most interesting and instructive, and it contains specimens which cannot be matched elsewhere in the country. At the Arnold Arboretum a most comprehensive collection is already made, but the trees are still in their infancy; there are some noteworthy private collections, too, like that of Mr. Charles A. Dana, on Long Island, but the Pinetum at Wellesley is, beyond question, the most complete and satisfactory which has yet been established in this country. It is not only unsurpassed in the number of species and varieties it contains, but ever since the trees were planted they have had persistent, intelligent and affectionate care, so that the individual specimens are as conspicuous for vigor and beauty as the collection is for its richness in varied forms.

The story of the Wellesley gardens has been told more than once in these columns, and Mr. H. H. Hunnewell, the proprietor of the famous place, is well known as the most generous patron of horticulture which this country has yet produced. As long ago as 1851, Mr. Hunnewell began to transform some forty acres of his large estate into an ornamental garden. It was rather an actual creation than a transformation, for the land was flat and featureless, apparently an arid waste, except where it was covered with a tangle of scrubby Pines and Birches. Hardly a tree then standing on these acres now remains, a conspicuous exception being an Oak which had already reached splendid proportions, and which has kept on growing in rugged strength and in nobility of expression. The grounds at Wellesley attract visitors from all over the country who wish to inspect the trim Italian garden, or the other multiform features of the place, but Mr. Hunnewell set out to make it especially strong in Rhododendrons and Conifers. At that time little was known of the possible beauty of the broad-leaved evergreens for outdoor cultivation here, and it was generally supposed that the choice Rhododendrons were unable to endure the rigor of our winters or the drought of our fervid summers, but the proprietor of Wellesley persisted in his purpose and has done more, perhaps, than any other man to demonstrate the perfect adaptability of many varieties with the brightest-colored flowers to the trying climate of New England.

For the purpose of a pinetum the light loamy soil of the Wellesley garden, resting on a porous gravel, which insures perfect drainage, is admirably suited, while the liberal employment of peat and certain other fertilizing material on the surface gives the trees the food they need. From the outset Mr. Hunnewell had grown Conifers, but it was not until 1867 that he prepared an acre or two of ground especially for the plantation in which he proposed to cultivate as many species and varieties as he found able to make a satisfactory growth in a New England climate. He began with about two hundred small nursery-trees, and year by year increased their number and enlarged the area of ground, until now, upon something more than ten acres, can be found four hundred well-grown specimens, some species and varieties being represented by single individuals and others by several. Of course, many exotics have failed to adapt themselves to their new surroundings, and one after another they have been discarded when all attempts to nurse them into vigorous life had failed. Of late years, too, as the trees reached out and began to interfere with each other, aggressive individuals here and there have been cut down to furnish space for the development of their neighbors. This has cost much labor and stern determination, for some of the trees which have been felled were quite as vigorous and promising as any that were left. One who has watched the growth of a tree for a quarter of a century naturally shrinks from destroying it, but Mr. Hunnewell has cut down several Nordmann Firs, for example, which were perfect specimens, thirty feet high, because they began to trespass on their neighbors, and he now plainly sees the wisdom of this course. The trees are planted partly on the plateau or general level of the garden, partly on ground which slopes somewhat abruptly into a ravine, so that there is a considerable variety of surface, and a series of surprises awaits the visitor who drives through the winding roads. It is difficult to select any single view as representative of the whole, for every rod furnishes a fresh picture and discloses new points of interest. Our illustration on page 455 was chosen from a number of photographs, not because it displays in any marked degree the excellence of individual trees, or because of any special superiority in their grouping, but mainly because the camera chanced in this one to catch the erect figure of Mr. Hunnewell, and show how lightly he bears his more than fourscore years.

Without giving a catalogue of the names of the different Conifers which seem to enjoy life in this beautiful place, it may be said that, including some garden forms with well-established species and varieties, there are rather more than a hundred represented here. The largest tree is a Norway Spruce, which was planted forty-two years ago, and it is now eighty feet high, with branches spreading over a circle sixty feet in diameter. The White Pine in the collection planted about the same time is not as tall, although there is one on another part of the grounds which is considerably larger. An American Hemlock, seventy feet tall; a White Spruce, several feet taller; Cephlonian and Nordmann Firs, planted in 1860, and forty feet high; an Oriental Spruce almost as large, and a Japanese Larch, Larix leptolepis, more than fifty feet high; a Douglas Spruce, thirty-six feet high; Abies concolor, thirty feet high, and a Cilician Fir of about the same size; a Pseudolarix, more than twenty feet in height and with a trunk nearly four feet in circumference, are a few of the specimens which show how rapidly this family of trees can develop in New England. All the Conifers which can be found in other gardens, especially forms of Taxus, Thuya, Tsuga and the like are seen here at their very best with many plants like Abies nobilis, Abies

magnifica and Abies amabilis trees of our Pacific forest-flora, which will only live in New England when cared for with exceptional intelligence. Of course, there are many smaller trees and younger ones, for whenever a new Conifer is to be had it is at once put on trial at Wellesley. Even if Mr. Hunnewell were planting simply for his personal pleasure, these nurslings would not be neglected, for he does not believe that the sole delight in a tree comes from sitting under its shade when it is fully grown. The skillful and hopeful planter finds a genuine pleasure in watching the very seedlings in his frame, and his attachment to them strengthens as they develop under his care. Each tree in Wellesley, from the smallest to the largest, is repaying its owner every day for any care or anxiety it has cost. And apart from the delight and instruction which this unique plantation gives to hundreds of visitors, to whom its treasures are generously thrown open, it is an unfailing source of pleasure to its proprietor, who enjoys it with a relish which grows keener every year.

Gardening at Newport.

IT is difficult to convey in words the individuality of a beautiful landscape, especially if it is not very sharply or forcibly marked in character. Keen sensibilities, acute powers of analysis, and a trained command of language are required if a place which is individualized by its gentle contrasts of form, its delicate scheme of color, and its subtly changeful atmospheric effects is convincingly to be described. Therefore, we have read with much admiration the description of the natural beauty of Newport, in summer and in winter, which Mr. Brownell gave in the August number of *Scribner's Magazine*. We could not do it justice by fragmentary quotations, but we can recommend it as sure to satisfy those who know and love Newport, and to give a charming and veracious idea of it to those who have never beheld it.

Mr. Brownell rightly says that you miss the quality of Newport's beauty entirely "if your own faculties are not in a state of real activity. . . . The appeal of the place is to an intelligent rather than a purely sensuous appreciation." This means that only an eye accustomed to the analysis of beauty can fully understand and value it; and doubtless Mr. Brownell's own description is so adequate because he is a critic of art of wide experience. But this fact only makes more surprising his insensibility to some of the mistakes which man has committed on this beautiful spot. One compares with astonishment his praise of Newport as Nature made it, and his praise of the way in which the summer resident has "improved" it. "Newport," he says, "owes to the summer resident not only a high standard of social life and a decorous employment of leisure, but also an æsthetic ideal of architecture and landscape-gardening." This statement he qualifies by finding fault with many of its buildings, confessing that "architecture has, perhaps, been as much travestied as illustrated. But," he then adds, "there is no doubt at all of the immense service to the place rendered by the summer resident's landscape-gardener, who has covered broad acres of it with lawns and boscages, clumps of trees and bushes, heaps of flowery luxuriance walled in by Privet and Buckthorn, and has, more than any other agency, except the climate and the natural lay of the land, exhibited the potentialities of elegance inherent in these latter."

We think that Mr. Brownell's strictures upon Newport architecture might well have been more strongly couched, but his failure to criticise with more explicit severity in this direction is less a matter for regret than his unstinted bestowal of praise upon Newport gardening.

One fault displayed by Newport architecture can certainly not be charged against its gardens; they show no distressing degree of discordant variety. In fact, they sin in the opposite direction. Variety is one of the most precious things in art when it can be secured without discords; without the impairment of general harmony. Any well-laid out public park shows us that, in gardening-art, perfect unity and beauty of general effect may be achieved with never a repetition of the same scene; the same arrangement of trees and shrubs; the same choice of floral ornaments. And a similar result might have been achieved at Newport even with a succession of grounds as limited in size as is usually the case there. Had competent landscape-artists designed these grounds, or had their owners felt any genuine personal interest in them, and been able to express it with any modicum of horticultural knowledge and artistic skill, there might have been a long succession of gardens, each individually arranged and furnished; each displaying fresh beauties, novel effects, distinctive characteristics, yet none of them "swearing" at their neighbors, for the reason that there is no such bold opposition between one good gardening scheme and another as there may be between architectural schemes even of the most excellent sort.

But a quite wonderful degree of monotony marks Newport gardens. It is due in part to the general lack of any definite scheme at all—any real appreciation of the special character of the site; any clear intention to produce well-balanced, well-marked, harmoniously beautiful effects; any desire to accommodate these effects to the character of the house or to the chief points of observation supplied by the features of the house, or the line of the street or the private road. And in part it is due to the perpetual repetition of the same short list of ornamental plants, each owner striving, apparently, to possess what his neighbors possess—to be in the current horticultural fashion. The average Newport garden—and there are few exceptions—lacks both coherence and personality in design; and its contents bear witness not so much to the tastes of its owner as to the changing floricultural currents of the year.

Yet this monotony would be less displeasing were the general local ideal with regard to what such gardens should be more sensible, and more sensitive to the dictates of local Nature. One sees no difference between the gardening ideals which dominate here and those which dominate at inland places like Lenox or in the villa suburbs of Boston or Philadelphia. When this is said, and when Mr. Brownell's description of the peculiar quality of Newport's natural beauty has been read, it will be understood that the result must be far from satisfying, because true harmony between Nature's work and man's cannot under such conditions exist.

True artists in gardening would have appreciated the individuality of the spot, in its lines, its colors, its outlooks and its atmospheric conditions, and would have tried to conform their own schemes thereto, while not disregarding the fact that architectural elements are, in many parts, dominantly conspicuous. Often, in deference to the prominence of the house and the paucity of the grounds, they would have chosen some formal type of garden, at least on sites which are encircled by straight lines of street. Then, their naturalistic designs would have been very simply cast, in deference to the simplicity of Nature's forms; and, especially, their color schemes would have been reticently managed, to harmonize with the delicate opalescent quality of Nature's coloring.

But, instead of this, we see attempts at elaborate landscape schemes, confined within a few roods or even rods of ground. We see an overcrowding of vegetation, at war with the wide, open, airy placidity that makes the special charm of the natural landscape. We see no effort to produce artistic effects with materials drawn from local vegetation, but an inartistic huddling together of exotics from every part of the world. And we see the most lavish use of the brightest, crudest colors which commerce can supply. Nothing could be more out of place in any small naturalistic garden than large pattern beds, stiff in line and glaring in color; they are especially inappropriate at Newport, because Newport's natural coloring is so tender and delicate, and yet they are used here with a prodigality in number, a puerility in design, a disharmony in brilliant hues,

and a lack of skill in placing, which can hardly be paralleled.

Nowhere else has Nature worked more skillfully to prepare a place for a pleasure resort; but rarely has man, with much money at command, done more to contradict and obscure her intentions. Newport seems to express ostentation rather than true elegance, a feeling for the sumptuous rather than a feeling for the beautiful, the desire to be lavish and conventional rather than the desire to be artistic and individual. And in producing the totality of this expression its gardens play an even more prominent part than its houses.

Foreign Correspondence.

London Letter.

ALBERTA MAGNA was distributed as a new plant in 1891 by Mr. W. Bull, but it had been in cultivation at Kew several years before that time, and there is now a plant in the winter garden seven feet high, besides smaller specimens in pots. One of these is now flowering for the first time in cultivation. The genus belongs to the order Rubiaceæ, and while A. magna is a native of Natal, the only other species known is a native of Madagascar. The leaves of A. magna, which promises to grow into a small tree, are not unlike those of the Cherry Laurel, and the flowers, which are in crowded terminal panicles, are tubular, an inch long and colored bright crimson. When fully grown the plants will, no doubt, produce larger heads than these now at Kew, and as the flowers are succeeded by winged fruits of a bright red color, the plant has a double attraction. From its behavior at Kew it is possible that it will bear a few degrees of frost. It is evergreen, and pleasing to look at even out of flower.

PINUS AYACAHUITE.—Although introduced into English gardens fifty years ago by Hartweg, and again by Roezl, this handsome Mexican Pine has not found any recognition among growers of Coniferæ, even in those parts of the country where it would succeed. Messrs. G. Paul & Son, of Cheshunt, have, or had, a tree of it about forty feet high, which coned in 1882, and there is a healthy example of it in the garden of Mr. Freeman-Mitford, at Batsford, near Stratford-on-Avon. This week a cone-bearing branch of it has been sent to Kew by Mr. John Tremayne, of St. Austell, in Cornwall, who writes that it was planted in his garden about forty years ago, and has always borne the name of P. nigricans. It is now a large tree, "a far better thing than any P. excelsa I have ever seen," but it does not often produce cones. The specimen sent bore a cluster of three cones, each a foot long and four inches wide, slightly curved, the scales large and open. In Mexico it grows to a height of one hundred feet, and is not unlike P. excelsa, to which it is closely allied. There are many places in the United Kingdom and elsewhere where this fine Pine would thrive as well as it does at St. Austell.

BEGONIA MARGARITACEA.—This is a new hybrid between B. coccinea (corallina) and the bronzy-purple-leaved variety of B. incarnata, known as Arthur Mallet. It was shown by Messrs. J. Veitch & Sons, the raisers, this week, and received an award of merit on account of the pretty coloration of its leaves, which are dark purple, profusely spotted with pinkish white. It is likely to become a favorite foliage Begonia, and from the floral characters of both its parents it ought to be equally attractive as a flowering plant.

MOMORDICA MIXTA.—Fruits of this fine tropical Gourd have been grown this year for the first time at Kew. I noted the male plant some time ago as a handsome stove-climber well worth growing for its large, velvety, cream-yellow and maroon flowers, but these are comparatively unattractive by the side of the brilliant orange-scarlet fruits, which are about the size of ostrich-eggs, and covered all over with spiny points suggestive of sea-urchins. The plant is perennial, and has a tuberous root-stock, from which the annual stems grow to a length of twenty feet or more. Of course, both male and female plants must be grown, and the flowers fertilized artificially, if the fruit are to be developed in cultivation. A piece of stem bearing three fruits within a few inches of each other was shown at the Drill Hall this week, and attracted the attention of decorators as well as pomologists. The species is a native of the east, including Cochin China, another name for it being M. Cochinchinensis.

BENINCASA CERIFERA, the Chinese Wax Gourd, was also shown from Kew. This is one of the most striking of the big-fruited Gourds grown over the Water-lily tank, its fruits being two feet long and about nine inches in diameter, covered with erect bristly white hairs and encased in a thick layer of gray-white, wax-like bloom, which is said to have some economic value in China. It is also known as the White Gourd. Another name for it is B. hispida.

TOURNEFORTIA CORDIFOLIA, which was distributed by Monsieur Bruant two years ago as a new Borage wort of shrubby habit, with large cordate leaves and crowded terminal-branched racemes of Heliotrope-like white flowers, is now flowering at Kew for the first time. Whatever it may be like in South America, where it was found by Monsieur E. André, who introduced it, there is little charm in it as a flowering plant here, although the leaves are large and handsome, and there is the possibility of crossing it with Heliotrope, as suggested by Monsieur Bruant. The leaves are cordate, six inches by four, on petioles two to three inches long, and they are of a rich dark green color, with the texture of the leaves of common Heliotrope. There is a figure of the plant in *Revue Horticole*, 1887, page 128, which is reproduced in Monsieur Bruant's Catalogue for 1892.

RICHARDIA ÆTHIOPICA, the well-known Calla, is proving a useful aquatic in the south of England. I have seen and heard of it this year in several gardens, where it grows on the side of lakes or ponds, the roots being planted a foot below the surface of the water, so that the frost cannot reach them. One grower has them in water two feet deep, where they have stood several winters and flowered well in the summer. The *Gardeners' Chronicle* this week reproduces a photograph of a large piece of water in Trelissick, Cornwall, showing a large expanse of Richardia all along the margins and crowded with flowers. Primula Japonica is equally fine on the banks near the water. I have seen this plant as thick as Clover round the sides of a lake in Cornwall. The Richardia as a water-plant is a good "wrinkle." In south Africa it chokes the streams and fills the ditches and swamps. It is quite different in habit from the other species of this genus.

MILTONIA BLEUANA ROSEA is a third variety of the hybrid Miltonia raised by Monsieur Bleu, of Paris, from M. vexillaria and M. Roezlii, and which flowered for the first time five years ago, the seeds having been sown in 1884. The same cross was effected by Messrs. J. Veitch & Sons and flowered in 1891. The flowers are four inches across, similar in construction to those of a good variety of M. vexillaria, white, with a dash of red-purple at the base of the segments. A variety called aurea has a conspicuous blotch of yellow on the disk of the labellum, and this new variety rosea is remarkable in having a suffusion of rose on the greater part of the petals. A plant of it, bearing a six-flowered spike, was shown this week by Monsieur Jules Hye Leysen, of Ghent, and obtained a first-class certificate. If this hybrid proves to be as easily grown and multiplied by division as M. vexillaria it will be a most useful addition of what are here known as Pansy-flowered Orchids.

ONICIDIUM ORNITHORHYNCHUM ALBIFLORUM is a beautiful Orchid when grown and flowered as Mr. R. J. Measures exhibited it this week, his plant carrying no less than seventeen spikes, bearing about seven hundred flowers. It was awarded a first-class certificate, not because it is new, for it was first flowered by the late Mr. John Day in his famous Tottenham collection twenty-one years ago. The type is a well-known cool-house Orchid, its warty-lipped rose-lilac flowers, with a smell suggestive of rhubarb, being com-

mon in collections. But this white variety, white, that is, with a yellow "wart" or callus, is a rara avis in English collections, and Mr. Measures' fine specimen is tantalizing to those who would like but cannot get a plant.

Masdevallia attenuata and M. Laucheana, both new introductions, with small white flowers tipped with green, were shown in flower this week by Messrs. H. Low & Co., and were awarded botanical certificates.

New Chrysanthemums.—The following received awards of merit this week: Madame C. Molin, a fine Japanese variety, broad petaled, bold in form and colored deep golden yellow, tinged with red-brown; Louise, also a Japanese variety, with large flowers, the petals inclined to incurve, white, tinged with rose on first opening; Reine d'Angleterre, a Japanese reflexed variety, elegant in form and colored rose-purple; Préfet Robert, an incurved Japanese variety, colored deep maroon, with a silvery reverse; M. A. De Lacvivier, of similar character to the last, colored carmine red, with bronze yellow reverse; Hairy Wonder, a well-named Japanese variety, the segments being covered with hairs, the flowers large and colored cinnamon-red; Miss Goschen, a large-flowered Japanese variety, with flat, broad, clear yellow petals; Admiral De Vellau, a deep yellow, large-flowered Japanese reflexed variety of considerable merit; Mrs. H. J. Jones, an incurved Japanese variety, broad petaled, white, with a creamy yellow tinge; Duchess of York—the handsomest and most distinct of the new varieties shown this year. It is pure Japanese, the flowers large and full, the petals curled and the color a bright clear soft yellow. The plant is said to be of good habit. It was raised in Scotland and is now in the possession of Mr. Jones, of the Ryecroft Nursery. Some of these obtained a certificate from the National Chrysanthemum Society, as well as from the Royal Horticultural Society. They represent the pick of a great number of new kinds shown at the two meetings.

Carnations.—May Godfrey (white) and Reginald Godfrey (salmon), recently noted by me as first-rate new varieties, were awarded first-class certificates this week. They are certain to take rank with the best of the winter-flowering Carnations grown largely by florists for market. They were raised and are being sent out by Mr. J. W. Godfrey, nurseryman, Exmouth, the well-known raiser and grower of new Chrysanthemums.

London. *W. Watson.*

Plant Notes.

Quercus coccinea.—The Scarlet Oak is one of the first trees which come into our minds when any allusion is made to the autumn colors of our woods. It is a tree of the first size and handsome at all seasons, with abundant shining leaves in summer and clean limbs in winter, but in the autumn its leaves turn to a glowing scarlet and hold their brilliancy longer than any other one of the Black Oaks, all of which turn to some bright shade of red. It cannot be too often stated that among trees valuable for planting in parks, or streets, or private grounds, none are so strangely neglected as our native Oaks. They grow with as little difficulty and quite as rapidly as the trees commonly planted, and there are none which can be used with less fear of disappointment.

Viburnum dilatatum.—This is one of the most recent of the Asiatic Viburnums introduced into cultivation here, although it is very common in Japan and central China. Seeds of it were sent to this country in 1880 by the Agricultural College at Sapporo, and the plants raised from these bloomed for the first time in the Arnold Arboretum in 1888. Since that time it has proved its perfect hardiness, and every year gives new testimony to its value as an ornamental plant in autumn, when its copious clusters of berries, bright red, sometimes tinged with orange, make it a very conspicuous object. Like most other Japanese plants, it retains its leaves late in autumn, and they have turned this season to a bright yellow color, although usually when frost comes earlier the colors are more dull. Viburnum dilatatum is a spreading shrub, some eight or ten feet high, resembling our common V. dentatum in habit. As a flowering plant it has but ordinary merit, although about the middle of June it puts forth liberally small flowers, which quickly fall. Its prime merit is its fruit, which makes it at this season one of the most showy of shrubs.

Rose Mrs. J. Pierpont Morgan.—This is a sport from Madame Cusin, which originated with Mr. John N. May, of Summit, New Jersey. Like its parent, the flower is of most charming form, and is at its best before it has fully opened. In color it is of the fashionable shade known as cerise. It is not quite a self, but shaded light at the base of the petals; still its general appearance is rich and bright, and it is especially effective under artificial light. As seen at Mr. May's, the plants are strong-growing, with good foliage and prolific of fine flowers on long stems. The flowers, while of fine substance and color, have the added merit of lasting for an unusually long time, the petals adhering so firmly that some flowers, now before us, which were cut five days since, cannot yet be shaken apart.

Iris stylosa.—Encouraged by the genial temperature this Iris commenced to flower last week in the open. This Algerian species heralds a new floral season for this genus, for, excepting an occasional or desultory flower, the garden has been bare of Irises since early August. In its native country it is said to flower usually in December, and here it is properly a cool-house plant. Thus protected, well-grown plants, root-bound in pots, will flower freely. It is hardy here in a sheltered corner, at least, and it is well to plant out spare roots, for the chance of flowers, when weather conditions permit. The flowers are purples of various shades, and there is also a white variety. They are stemless, but furnished with such a long tube between ovary and petals that they are borne well up among, or even above, the leaves. This is one of the Irises with narrow grass-like foliage and thin, narrow, creeping rhizomes.

Corydalis lutea.—The bright yellow flowers of this plant are still opening in early November, and very cheerful they look now that so many of their companions have been blackened by the frost. But, besides its special value as a late-flowering plant, this Corydalis has the almost unique habit of continuous bloom from May until hard freezing weather. The plant, which is a native of the rocky parts of southern Europe, is naturalized in many other countries, although it is not often seen here. As grown here it is a true perennial, and becomes in time a low cushion, two feet across, of pale green twice-divided leaves. The flowers are borne in short racemes, are held above the foliage on slender stems, and the whole appearance of the plant at once suggests its relationship to the Dicentra. It is one of the best of plants for the rock-garden, and it will thrive in an exposed situation and sterile land as well as in the richest garden soil. It can be increased from seed or by division, and when once established it will go on flowering indefinitely. It is much more attractive than the more common Purple Fumitory, C. bulbosa. Our native C. aurea is a neglected biennial which flowers from early spring until midsummer, but it needs a rich well-drained soil and full sunlight to be at its best.

Cultural Department.

Work in the Greenhouse.

BY this time everything about the greenhouses should be made snug, for in this section we may expect a snow storm any day, and all loose glass, leaky hot-water pipes and other repairs must be attended to without delay. One of the commonest errors of construction is to use an insufficient quantity of piping to supply the heat in coldest weather without pushing the apparatus to do more than should be required of it. Much fuel is thus wasted, not to speak of risks of injury to boilers, grate-bars and piping. Every glass structure should have a series of pipes to hold in reserve for zero weather, and to be put to regular use on these occasions alone, though they

Fig. 71.—View in Mr. Hunnewell's Pinetum, at Wellesley, Massachusetts.—See page 451.

ought to be tested for air at times, especially when the heat is turned on after a period of disuse. Where the boiler-power itself is inadequate in severe weather, the question of an auxiliary heater is worthy of consideration. We have a large tubular boiler that will do all the work in almost all weather, but it is too large in mild autumn and late spring, and often gives much more heat than is required at these times, so that a smaller heater was put in to help the larger one out in very cold weather and do all the work in very mild weather. The economy of this plan has been made evident both in coal bills and wear and tear of apparatus.

Most gardens have a quantity of cold frames for storing plants of various kinds in winter, but more especially Violets, and I have often wondered why more of these frames are not made frost-proof by the addition of a row or two of pipes, either for steam or hot water. The replacing of straw mats alone with us costs each year as much as would pay for the coal to produce the needed heat, to say nothing of the labor required to cover and uncover the frames. Besides this, there are periods when the frames must be kept closed, and then the snow must be shoveled away before sun and air can be let in again. Seasons past have proved beyond doubt that cold frames are not frost-proof in this section; no matter how well they are lined and protected by mat coverings, there is sure to be a time when the frost will get inside, and all who have grown Violets know that a freezing will stop the production of flowers and aid the destruction caused by damping, when a little fire heat would save all this trouble.

Many plants, it is true, are not injured, but benefited by a little frost when at rest, such as the tender annuals, biennials and perennials, and these, of course, could be placed in an unheated frame, but plants that are expected to produce flowers in midwinter need a little heat in winter in this section, and in spring, when emptied for hot-beds, not half the fermenting materials would be needed, and the winter salads or early spring vegetables could be grown with ease and comfort.

A heated frame of this description should have posts sunk below the frost-line and spruce-planks used for the sides and ends, with ordinary three-by-six-feet garden-sash for the roof, these resting on three-by-four-inch rafters eight feet long. The two feet above the sash should be covered with a hinged wooden ventilator, and made in convenient lengths, this giving two feet inside for a pathway along the back. The best location for a frame of this sort would be at the east or south side of a heated greenhouse, utilizing the wall for the back of the frame, and the heat could be introduced at one end and return at the other through the pipes in the greenhouse, in this way securing two flow pipes, instead of a flow and return. The pipes should be placed at the front of the frame, so that the heat may strike the glass and ascend.

The greater part of the work in a house of this sort could be done from the outside by lifting off the sashes in mild weather, and at other times from the walk along the back, by entering through a door at one end. A house of this description has many uses, both in winter and in spring, and is equally valuable in summer, but where Violets are an essential all through the winter, which is generally the case, it becomes a vital question oftentimes how to meet the demand in the midwinter months.

Boston, Mass. *Plantsman.*

Plants under Glass.

THE inactivity among greenhouse plants, which is very plainly seen during the dull period which follows the Chrysanthemum season and continues until the new year, ought to be encouraged by every cultivator. Less moisture is needed in the houses then than at any other time, and temperatures must be kept down to the winter level, especially at night. It is not only a waste of fuel, but a waste of the energy of the plants, to excite them into growth. When such premature movement occurs plants will start late in the spring instead of making a vigorous growth after the resting season. Many plants in the warmer houses are evergreen, and show no appearance of being at rest even in the depth of winter, but they are, nevertheless, inactive, and they must be treated accordingly, and not urged into growth.

Climbing plants of all kinds are now resting, and for the most part may be cut back, so as to let in all the light on the other plants, for while shade is desirable in summer, it is detrimental to the last degree in winter. Before cutting plants back it is well to keep them dry for a week or two, when there will be less bleeding or loss of sap, and the cuts will heal over more quickly. Dipladenias, Allamandas, Bougainvilleas, and all plants that flower from the wood made the same season, may be cut back hard, so as to encourage a strong start next year, from as near the base as possible, but Stephanotis, Inga pulcherrima, tender Jasmines, climbing Roses, and plants that flower on the growth made the preceding season, must have only the weak shoots thinned out, so as to give the stronger shoots a chance to ripen and bloom well next year.

The hybrid Amaryllis, or Hippeastrums, as they are now called, are now without foliage, and should be kept dry for about three months, or until they begin to grow again. Most of the roots are lost each season during rest, but if a strong growth has been made in summer the flower-buds will be matured in the bulb and ready to develop as soon as the plants are repotted and the roots are formed. There is a great future for these splendid flowering bulbs when they are better known. Very little heat is required to grow them if they are started as late in the spring as possible and put into frames to mature after flowering time in summer.

Achimenes have become indispensable to us, and contribute no small part to the summer display. There is sometimes difficulty in wintering the bulbs. We shake them out of the soil they are grown in and place them in dry sand in a warm part of the potting-shed, and have had no trouble with them. Care must be taken that they do not start to grow prematurely in spring before they are placed in soil, or the young shoots will get a severe check at starting-time. All the ornamental-leaved Caladiums should be treated in the same way as soon as the leaves dry off, for if they are left in the pots they grew in during the summer they are very liable to decay at the base of the bulbs; and if the soil becomes damp where they are stored in winter, decay also follows. It is, besides, a great saving of storage-room if bulbs are shaken out in this way, and this is an important consideration in many instances. If there is decay in any of the bulbs the diseased part must be cut way and the sound parts washed, dried and a handful of powdered charcoal placed under the bulb when it is put into sand.

Gloxinias and Begonias are best wintered in the pots in which they grew in summer, if room can be found to store them, but, failing this, they may be placed in sand in flats. A temperature of fifty degrees will be found a safe minimum, or ten degrees lower than Caladiums can safely endure, as these are most sensitive to cold both when growing and at rest.

So many Chrysanthemums are now considered indispensable even to private gardens that it has become a problem how to store the stock-plants after they have bloomed, so as to get strong cuttings in spring. Those wintered in the greenhouse are apt to become weak and drawn. For several years after cutting down the plants we have placed the roots in cold frames, arranged together, each sort being carefully labeled. They are covered with mats in cold weather; the roots are sometimes frozen for weeks at a time, but this never hurts them, and a strong start is obtained in spring. We sometimes have to top the plants and take the second crop of cuttings in May for large blooms grown on a single stem.

Japan Anemones and Lilies that are grown in pots for decorative purposes should now be placed in a cellar for winter. If a little frost reaches them it is all the better for these plants, as it will prevent a too early start in spring, and when the weather is warm enough in spring they can be placed directly out-of-doors. The bushes of Lavender, Tritomas and plants of doubtful hardiness are heeled in in sand in the same cellar, but Hydrangeas must be placed where no frost will reach them, or the flower-buds are liable to be killed. Canterbury-bells, Hollyhocks, Pansies, Primroses and Foxgloves, all of which are doubtfully hardy here, must be stored in a cold frame, or, at least, part of them, so that there may be no chance of failure. If the Japan Lilies have not already been repotted this fall, it is high time they were seen to, as they root freely in fall after the old flower-stems have died down, and will continue to make roots all winter if potted now.

South Lancaster, Mass. *E. O. Orpet.*

Bordeaux Mixture and the Potassium ferrocyanide Test.

SO many complaints regarding a rather unusual blemish of apples and pears have been received this year, that it seems important to find the real causes of the trouble. The fruit in both sprayed and unsprayed orchards has been affected, but the most serious injury has undoubtedly been suffered where the trees have been treated. In the case of a Pear orchard belonging to S. W. McCullum, of Lockport, New York, fully seventy-five per cent. of the crop was practically ruined. This orchard was treated early in the season, soon after the fruit had set, and in a few days almost the entire crop was upon the ground. The small pears appeared as if they

had been attacked in several places by a fungus, causing small circular dark brown or black spots, varying from a sixteenth to an eighth of an inch in diameter. The fruit-stems and the foliage were affected in the same way. This orchard had been treated with the Bordeaux mixture made with the ferrocyanide test. That the treatment was responsible for the loss can scarcely be doubted, for in an unsprayed orchard containing the same varieties, and separated from the above only by a fence, no such trouble was experienced. Fruit similarly affected was received from other sprayed orchards, and there can be no question that most of the trouble, if not all of it, was caused by the Bordeaux mixture.

Apples have also been injured by application of this fungicide, but I do not know of a case in which the consequences have been so serious as those just mentioned. The fruit, King and Baldwin, in the orchard that is being treated by this station, showed some unfavorable results of the treatment. Notes taken June 29th show that the fruit was then injured by the applications. The mixture which had been applied, with the exception of the last treatment, made June 16th, consisted of six pounds copper sulphate, four pounds quick-lime and forty gallons of water. On June 16th the ferrocyanide test was used in making the Bordeaux mixture, but it was applied to only a few trees. At the time the notes were taken these trees showed more injury than the others, but the use of the test can by no means be held responsible for all the injury. In a neighboring orchard, containing Baldwin and Rhode Island Greening apples, the fruit was also rusty, although the above formula had been used. I have been informed of a still more marked case in which the mixture, when prepared according to the formula, caused rusty apples. The owner of the orchard was treating a few trees, and some were left untreated. In throwing the fungicide, some of it went upon a tree which was to have remained untreated. Only a small portion of the tree received the mixture, but the owner is positive that on this portion could be found all the rusty apples.

But, has all the rusty fruit produced this season been due to spraying? In the orchards of L. T. Youmans, Walworth, New York, badly rusted Baldwin apples could be found, and the trees had not been sprayed. Similar cases have come to my knowledge, and there seems to be no question that some unknown causes may have assisted in bringing about this condition of the fruit.

A microscopic examination of rusted and healthy portions of Baldwin apples shows that the epidermis of the fruit had been lost and that the cell-walls beneath, for some distance, had thickened and presented a brown, corky appearance. This change in the cellular structure of an apple appears to be a healing process, and probably takes place whenever, after some irritation, there is time enough for the change to take place before some form of decay sets in. The greater the irritation or injury, the deeper may be this corky formation. In most of the rusty apples produced this year only from four to eight rows of celis seemed to be affected in well-marked cases, but this was sufficient to give the characteristic rusty color to the fruit, although the shape of the apples was hardly changed.

The causes which have brought about this peculiar condition can only be surmised. The season produced some of it, and as much rain fell early in the year, this may have been one of the exciting causes. In what manner this was brought about still remains to be shown. But the important point is that the Bordeaux mixture, however prepared, increased the evil. This is our best fungicide, and if it can no longer be regarded as safe, the fungus fighters may find it advisable to make a new start in search of a remedy. From the fact that the most severe cases of rusting are in orchards in which the ferrocyanide potassium test has been employed in the manufacture of the Bordeaux mixture, in order to use less lime, I feel quite certain that by the addition of more lime than this test calls for the trouble may be lessened.

It has yet to be shown what is the best method of making this mixture, for, as regards the proportions of the ingredients, the work is still far from being finished. In the mean while I believe that the formula which has, on the whole, proved most satisfactory in this country is the use of six pounds of copper sulphate, four pounds of good quick-lime, and from forty to fifty gallons of water.

Cornell University. *E. G. Lodeman.*

Mushrooms.

THE popular idea that Mushrooms are very difficult of cultivation restrains many persons from making any attempt to grow them; but, as a matter of fact, few vegetables can be had so easily during the winter months. In some establishments regular houses are constructed for them, but this is not indispensable, as they may be grown quite as well in any cellar, shed or other place that can be kept dark and is close enough to prevent the heat from escaping too readily. Fresh droppings from the stable should be taken every day and thrown on the floor of the place where the bed is to be made. This should be turned frequently until enough has been procured for the bed. There is no need of mixing soil with the manure, as the crop will do equally well without it. The first bed should be made on the floor the whole length of the apartment, about three feet wide at the bottom and rounded at the top, with sufficient space for passing between the bed and the wall. Build up the bed in thin layers, tramping each one firmly until the whole is two feet thick. The firmer the bed is made, the less will be the tendency to heat too violently. A thermometer plunged into it will probably rise in a day or two to over one hundred degrees, but will soon begin to decline, and when it sinks to about ninety degrees the spawn should be introduced. Begin about eight inches from the bottom and make holes some four inches deep and from ten inches to twelve inches apart all over the surface of the bed, and into these place and cover up pieces of spawn about the size of a hen's egg. The bed must be left for about ten days in this way and then covered over with about two inches of fresh loam, which should be fairly moist, but not too wet, and beaten firmly with the back of a spade. The whole should then have a covering of hay or straw three inches thick at first, but if the heat is likely to fall below sixty degrees the covering should be increased.

When the first bed is completed, begin gathering manure for the next in the same manner and place as for the first, and the heat arising from the fresh manure will keep the atmosphere of the house sufficiently warm for the crop already under way.

Where there is room for four beds on the floor a constant supply can be kept up. Beds on the floor are preferable to those on shelves, as they are much easier made and there is less tendency to dry out. Watering, which is always attended with more or less danger while the crop is growing, is thus avoided. After the crop has been gathered the bed should be thoroughly wet with tepid water and a little fresh soil applied and again covered up with hay. A second crop can be gathered four or five weeks later.

Tarrytown, N. Y. *William Scott.*

Correspondence.

Planting Seeds of Cedar of Lebanon.

To the Editor of GARDEN AND FOREST:

Sir,—I have just received a cone of a Cedar of Lebanon which has recently been cut down on the grounds of a friend in England. As this is the only cone which has been preserved, I should like to plant some of the seed, but do not know how to go about the work. This particular tree grew on a heavy clayey soil, whereas the soil of Connecticut, where the seed is to be planted, is rather gravelly. Will this make any difference in its chance of life?

Greenfield Hill, Conn. *B.*

[The cones of the Cedar of Lebanon are not fully matured until the second, or, according to some authorities, not until the third year after flowering, so that if the cone which our correspondent possesses is not fully grown the unripe seeds will probably fail to germinate. If the cones are mature, the seeds will keep fresh in them for a number of years, and grow when taken out and planted. The cones of the Cedar of Lebanon are very hard, the thin broad scales being very closely imbricated or packed, and held together by an abundance of resin. A little patience is required in extracting the large, somewhat triangular, seeds, two of which are usually borne at the base of each scale. Generally, no perfect seeds are produced near the apex or the lower portion of the cone. A simple method of getting at the seeds would be to saw off both ends of the cone, then split it by driving a wedge or spike through its axis, afterward separating the scales and extracting the seeds, working from the base toward the apex, of course. The seeds should be planted in a pot or box of good soil composed of sand and loam, well drained beneath. Place the seeds so that they do not touch each other, and cover lightly with soil—a covering of once or twice as thick as the diameter of the seed being sufficient. There is usually

more danger from too deep than from too shallow planting. While the soil should be moist, it should not be wet. The surface soil, however, should never be allowed to become thoroughly dry, and a slight shading will help to prevent this. The temperature should not be allowed to fall below fifty degrees, Fahrenheit, for any length of time. As soon as the little plantlets appear they should have plenty of air and light, and having attained an inch or more in height they may be transplanted to other boxes or the open ground, where they will have more room than in the seed-box. The Cedar of Lebanon cannot be expected to thrive in the northern United States, although it may live in some peculiar localities. Any good soil is suitable for it, provided there is good natural or artificial drainage. —Ed.]

November Flowers in Vermont.

To the Editor of Garden and Forest:

Sir,—It is seldom that the first of November comes here in northern Vermont with as little frost preceding it as has occurred this year. In the most sheltered places plants were not injured. Milla biflora, which is a late bloomer here, was at its best. Calochortus Bonplandianus was also in flower. Viola pedata and its variety bicolor were both full of bloom. This is one of the best wild Violets in cultivation. It grows, as a rule, on very poor land, but when it is placed in rich garden soil responds very quickly to cultivation. Among other Violets which were in flower were V. Wilsoni, V. alpestris, V. primulæfolia and V. cucullata. Campanula rotundifolia was full of flowers. Primula cortusoides, which had had several seasons of bloom, seemed to be as full as at any time. The little Linaria alpina, from seed sown in May, was at its best. This is a very attractive little plant, not difficult to grow, and, so far as I can judge, is not inclined to spread here as some others of the genus do. Its flowers, which are in a sort of a raceme, are violet-blue and yellow, with spurs about the length of the corolla. It is a native of the Alps, and makes a fine species for the rockery.

Kniphofia Rooperi is one of the last of this genus to flower, and made a better showing at this than at any time before. Gaillardia grandiflora still afforded a few flowers, though by no means as good as the earlier ones. Callirrhoë involucrata, var. linariæloba, displayed a better bloom than I have seen on it this year. The little English Daisy, Bellis perennis, grown from seed sown in May, made a better showing of flowers than any other plant except the Pansies, and had been constantly in flower for more than six weeks.

Lepachis columnaris, var. pulcherrima, is a late bloomer in this climate, and our autumn frosts find it in full flower; and besides those mentioned above I counted twenty-seven different plants which were showing many flowers, some of them, like the neat little Sea Pink, Armeria montana, having been in continuous bloom since early summer. All of which goes to show that a northern garden is not necessarily a dreary place after mid-autumn.

Charlotte, Vt. *F. H. H.*

November in a New Jersey Garden.

To the Editor of Garden and Forest:

Sir,—Many plants, like Heliotrope, Scarlet Sage, Mignonette, Nasturtiums and Tea Roses, are still flowering here profusely in the open air, and our lawns now are greener and our gardens are more attractive than they were at any time during the parching drought of summer. Hardier flowers, like Cosmos, Chrysanthemums and Dahlias, were never more beautiful, and perennial Phloxes and perennial Peas are both in abundant flower. Among our shrubby plants the little half-trailing Abelia rupestris is, perhaps, the most beautiful just now, as it is covered with its fragrant pink trumpets in miniature, and its glossy foliage will remain all winter. Some long branches of the Japanese Honeysuckle are showing many flowers, which are made more beautiful as they hang beside other stems thickly set with black shining fruit. This is a most aggressive plant, and it is almost impossible to keep it within bounds here. It is more unmanageable even than our native Trumpet Creeper, which will send up strong shoots from underground stems many yards from the parent plant. This habit of the Tecoma, Stag-horn Sumach and some other plants makes us cautious about using them.

The golden flowers of the Witch Hazel are now strung along the bare twigs, but the leaves still remain on many shrubs, and the glowing scarlet of Spiræa prunifolia now makes it beautiful in spite of its whippy habit. The rich brown of S. Van Houttei, the bronze of the Forsythia and the indescribable brilliancy of some of the Barberries, especially of B. Thunbergii, makes the shrubbery quite as beautiful as it ever is when covered with flowers. The black fruit of Ilex glabra appears to the best advantage as it is set amid its shining evergreen leaves, and the gray, aromatic, waxy fruits of the Bayberry are crowded along the twigs, where they will remain all winter with the fragrant leaves. The red and black fruits of Pyrus arbutifolia and P. nigra still cling to the shrubs, as do their crimson leaves, and the fruit of Ilex lævigata, which was red in September, fully a month before that of I. verticillata turns, is still abundant. It is said that the berries of our native Holly are not as bright as those of the European tree. But the fruit of our own trees differ in the intensity of their coloring, and some of them bear berries which cannot be surpassed for brilliancy. The Cedars are full of their gray cones, and these Cedar sprays when mingled with the berried twigs of the Holly are singularly beautiful. The Hollies have not been so full of fruit for years as they are to-day, owing to the fact, perhaps, that the rose-bug did not ravage their blossoms this year as usual. Akebia quinata is as green as it has been all summer, and Rosa Wichuriana, which I received two years ago, has sent stems over a wire netting for a distance of twelve feet, and still carries green leaves with the small shining hips scattered along their last year's growth. Altogether, it is not desolation which November brings to our gardens in southern New Jersey; it rather crowns and completes the year with a rich and ripened beauty.

Vineland, N. J. *Mary Treat.*

Exhibitions.

Chrysanthemums at Philadelphia.

THE autumn exhibition of the Pennsylvania Horticultural Society was held last week in Philadelphia in the Academy of Music. Beginning with the roomy lobby, where some of the largest and best plants were disposed, the spacious halls and adjoining rooms were crowded with exhibits. The large floor-space afforded by the stage and by flooring over the parquette was all needed for Chrysanthemum plants, vases of Chrysanthemums and Roses, and for decorative plants on exhibition. The show was the largest in the number and variety of exhibits and the most elaborate in arrangement and decoration of any ever held in this city, and the great space seemed strangely small on account of the generous display in all directions. Coniferous trees, evergreen plants and branches of autumn leaves made the background for exhibition plants which encircled this main hall. Groups of choice decorative plants, scattered among the bright-colored Chrysanthemums, presented a more pleasing effect than is usually seen at a flower-show, where the exhibits are too often set in severe lines.

Specimen plants have heretofore been the leading feature in the Chrysanthemum exhibitions of this society, but those shown last week, while of large size, well grown and creditable, lacked the artistic finish which the handiwork of James Verner has taught the visitors to Philadelphia flower-shows to expect. Some of the prize plants measured as much as the phenomenal specimens shown several years ago by George W. Childs, A. J. Drexel, E. W. Clark and R. S. Mason; but the flowers were less notable in size, form and color. For the best ten plants, ten varieties, Gordon Smirl, gardener to Joseph F. Sinnott, took first premium. In this collection, Mrs. Robert Craig was the best white, and a good plant of Gettysburg, a red of the George W. Childs type, was one of the very brightest plants in the entire show. Ostrich Plume, another plant of this group, was a feathery light pink, introduced by Peter Henderson & Co. two years ago. Good Gracious, President Harrison, Minnie Wanamaker, Ada Le Roy, Frank Thomson, Viviand Morel and Colonel W. B. Smith were other varieties in the ten. Emil Lieker received second premium in the same class. A plant of Hicks Arnold was the best in this set, with Cullingfordii, Lillian B. Bird, Colonel William B. Smith, Mrs. A. J. Drexel, Mrs. Irving Clark, W. H. Lincoln, Louis Boehmer in a good shade of pink, and Ruth as the best white flowering plant. In the display of twenty-five varieties, one bloom to each plant, the best were Mrs. Craige Lippincott, Mrs. F. Thomson, E. Dailledouze and Mrs. Bertha Robinson, a large flower of coarse habit, the broad incurved petals crimson within and pink on the outer side. C. W. Cox, gardener to Clark Kemble, received first premium for this exhibit.

The best six specimens of different varieties in ten-inch pots

included what seems an important novelty in a plant of Mrs. Leslie Ward, similar to Hicks Arnold, but a deeper orange. For the best seedling plant, William Boyce, gardener to Charles Hibbard, was awarded first premium. The flower is large, white, tinted with pink, the petals whorled. The best specimen plant of white was a plant of Puritan; the best yellow flowering plant, W. H. Lincoln, and the best specimen plant of any other color, Hicks Arnold. The prize for the best three plants, three varieties, introduced to commerce during 1894, was given to Mary Bell, a showy crimson flower, the outer side of the petals a lighter shade of the same tone; it is of compact form, but lacks depth. Yellow Queen, second in this collection, is a light yellow, of medium size, with longer outer petals; and Major Bonnaffon, more incurved than Yellow Queen and deeper in color, was the third.

The sensation of this year's show was the new white Chrysanthemum, Philadelphia, grown by Hugh Graham, and a seedling of Marguerite Graham, said to be crossed with Mrs. Craige Lippincott. The color under artificial light is pure white, but in sunlight it shows a faint lemon tint; the petals are incurved, in some flowers twisted regularly around the flower at the middle, and enclosing the stem for a considerable distance, so that the form is completely globular. The petals are ribbed and the flower has good substance. Philadelphia received a silver medal, the Blanc prize for best seedling and first prize for vase of fifty blooms, and it has already taken prizes in many other cities. A large white unnamed seedling of good form, exhibited by T. H. Spaulding, Orange, New Jersey, was awarded a silver medal. Silver Cloud was another new seedling, a flower of large size and good depth, flesh-white in color. Mrs. Charles F. Berwind was one of the most distinct new seedlings, incurved, red inside and pink outside. It is noteworthy that Katherine Leech and Annie Monahan, which were prize flowers of last year, were only occasionally seen, and such promising varieties of 1893 as Dr. Herbert M. Howe and Mrs. W. A. Reed were not shown at all, and there was not one specimen plant of such a standard variety as Kioto. Some beautiful flowers of the clear yellow Eldorado were shown by Thomas Monahan. Esmeralda was one of the best among the deep pink flowers, and Harry Balsley was the best light pink. Edward Hatch, Dorothy Toler and Viviand Morel were the other best pinks. Minerva was one of the very best pale yellows, and Eugene Dailledouze was always one of the best flowers in every collection in which it appeared. Golden Wedding, Mrs. Craige Lippincott and Major Bonnaffon were also frequently seen in admirable form. The exhibition was particularly rich in white flowers, and most of the prize seedlings were of this color. The drift of public taste may be seen in the fact that there were no Pompons on exhibition, and no Anemone-flowered varieties, although prizes were offered for both these classes.

It ought to be added that the prime value of the show lay in the affluence of its display and in the high average excellence of the individual flowers. Cut flowers of the very first quality were shown by the thousand, many of them not being entered for competition, but from what seemed a general desire to make the display rich and impressive. Of course, the Chrysanthemums overshadowed the other features of the exhibition, although there were Roses enough to make a fair show in themselves, with choice Orchids from Pitcher & Manda and Edwin Lonsdale, and great stretches of Carnations, the most noteworthy being the new seedlings shown by John May, and Della Fox, a variety raised by Myers & Samtman.

Chrysanthemums at Boston.

THE Chrysanthemum Show of the Massachusetts Horticultural Society, last week, was generally pronounced better in arrangement, and, therefore, more effective as a spectacle, than any ever held in Boston. This arrangement was simple, the cut flowers being confined to the lower hall, where there was nothing else but Chrysanthemums, while the specimen plants were grouped in the centre of the upper hall. The large Chinese vases standing on the floor, and filled with cut flowers with long stems, were very taking; admirable, too, in their way, were the plain brown earthenware cylindrical jars used as receptacles by the Waban Nursery Company. The cut flowers seemed to be more uniformly large and regular than ever before, and when massed in vases they certainly produce striking decorative effects, however ugly and unnatural the tall, single-flowered plants are individually.

The cut flowers exhibited by E. M. Wood & Company were uniformly admirable, and certainly no better collection has ever been made by one exhibitor. The six prize vases with ten blooms each showed flowers of E. Dailledouze, Mrs. Jerome Jones, Viviand Morel, H. Balsley, Golden Wedding and Mrs. Phipps. A vase of ten flowers of Inter-ocean, one of the best of this year's novelties, won another prize for E. M. Wood & Company. This flower is a soft pearly pink, and it may generally be described as a light-colored Viviand Morel. Other good introductions of the year, which seem to be genuine advances on the older varieties, are, in yellow, Major Bonnaffon and Eugene Dailledouze; and in white, Mrs. J. G. Ils and Mutual Friend. James Brydon, gardener of Hon. John Simpkins, once more gave evidence of his skill by exhibiting a superb vase of fifty long-stemmed blooms in splendid form. His vase of six Japanese incurved blooms and one of Eugene Dailledouze were also admirable, and so were his prize blooms in the class for twenty-five distinct varieties. A new exhibitor, Mr. W. Slack, of Stamford, Connecticut, won the second prize in this competition with an admirable lot.

For twelve specimen plants the prize went for the fifth time in succession to Walter Hunnewell, Esq., T. D. Hatfield, gardener. Perhaps Mr. Hatfield has grown larger plants in some former years, but he never showed a lot so uniform in size and finish as these remarkable specimens. The best of the twelve seemed to be Arethusa, a bright rose; W. H. Lincoln, the well-known yellow; G. W. Childs, crimson, and Portia, a pale pink, which many visitors considered the handsomest plant in the hall. The second prize went to N. T. Kidder, Esq., for another admirable lot of plants grown by Mr. William Martin, his gardener. Groups for effect were unusually good, the three prizes being awarded in order to the Bussey Institute, John L. Gardner and W. H. Elliott. The plants in the last collection were admirably grown for commercial use, and each plant was perfect, but the group failed in effect on account of the absence of other plants to blend with the Chrysanthemums. The Bussey Institute group, arranged by Mr. C. J. Dawson, was unusually attractive.

Flowers of the Louis Boehmer type seemed unusually abundant, and to a certain extent they were a blemish on the exhibition. The colors are usually indefinite and weak, the flowers are neither good in form nor substance, and they almost always show the centre in a disagreeable way.

A Flower-show in New York.

THE music-room of the Eden Musée provides a good setting for a flower-show, where fine individual exhibits, rather than great masses of flowers, are to be viewed. Messrs. Siebrecht & Wadley, the well-known florists, have arranged an exhibit in this hall, to continue ten days, and, in addition to their own rich collection of plants and flowers, have drawn on the treasures of a number of private gardens. I found on my visit during the first day of the show that the side walls, which are fully mirrored, had been draped with luxuriant vines of Wild Smilax, and at the base of these were arranged tables containing handsome specimens of Ferns and other foliage-plants, among which were distributed exhibits of Orchids, Chrysanthemums and seasonable flowers. Masking the front of the stage was a well-arranged bank of Ferns, Orchids, Anthuriums, etc., which was a most attractive feature. The beautiful golden-yellow Oncidium varicosum Rogersii, with its graceful sprays, was employed here with great effect. The finest individual plant of this variety was from the garden of Mr. G. Amsinck. Noticeable plants in the collection were Lælia autumnalis alba, and a large, deeply colored form of Vanda cœrulea, for which there does not seem to be a varietal name. A finely flowered specimen of the usual form came from the garden of Mrs. Frederick Goodridge. Distributed over the floor-space were many specimen Tree Ferns and Palms, about the bases of which were congregated masses of Chrysanthemums, grown in differing styles. There were standard plants, well flowered, from Mr. W. E. Dodge, the new pink Erminelda being especially noticeable for fine colors. Mr. G. Amsinck sent seventy specimens grown to single stems in six-inch pots, not of the largest size, but well grown. Two masses of naturally grown plants from Mrs. E. R. Laidew, Glen Gove, New York, were very pleasing in contrast to the usual formality, There were also good standards and naturally grown plants from Mr. J. Hood Wright. The best specimen blooms were shown by Mr. J. J. McComb, of Dobb's Ferry, some new varieties of large size and very creditable. Yellow Queen, Lillian Russell, Golden Gate, Excellent and Viviand Morel were the best.

Mr. Ernst Asmus exhibited well-finished flowers in large vases. Siebrecht & Wadley exhibited a new Chrysanthemum,

the Mrs. Frederick Goodridge, which is a seedling of the largest size, well rounded, with narrow, rather twisting petals, and pure white. It is especially valuable for its earliness, the flower having been in good condition to cut on October 2d. All the new varieties of the season were shown here, but it seems unnecessary to repeat names which are noted in detail in reports of the larger shows. Why cannot New York support a show of seasonable flowers every month of the year, in such a hall as the one in which this show is given?

Elizabeth, N. J. *J. N. Gerard.*

Notes.

In their advance list of novelties for next year, Thorburn & Co., of this city, announce another Dwarf Lima Bean of the Kumerle strain. It seems probable that we shall soon have as many varieties of bush Limas as of bush Wax Beans, and for practical purposes they may soon supersede altogether the old climbing sorts.

A correspondent writes that he has a tree, purchased under the nursery name of the Hungarian Silver Linden, the entire under surface of whose leaves literally shines like silver. He wishes to know if seedlings from this tree will show the same whiteness of leaf which appears so striking in this individual tree. To which we reply that trees vary very much as to the glaucous or silvery color of their foliage, as persons well know who grow seedlings of Picea pungens. As to this particular Linden we can only say that seedlings from a magnificent specimen of what is probably the same Linden on the grounds of Mr. Thomas Meehan do not all show this silvery whiteness. In fact, Mr. Meehan thinks that, at least, half of them show very little of it.

Professor W. F. Massey, of the North Carolina Experiment Station, who has written several times to this journal in regard to the possibilities of the successful production in that state of bulbs in commercial quantities, has just issued an illustrated bulletin, in which he gives directions for the cultivation of Amaryllis, Freesias, Galtonia candicans, Roman Hyacinths, Lilies, Narcissus, Tuberoses and Tulips. It is stated that bulbs of a superior quality have been produced at the station farm near Raleigh, and this bulletin is intended to encourage the farmers of North Carolina to make a trial of the industry in a small way and familiarize themselves with the methods of treating and handling the crops. It is hoped that this may prove an industry in which the people of North Carolina can, in time, compete successfully with the growers in Holland, France and the Scilly Islands.

Judging from the reports in the Minnesota papers, the frauds in the sales of timber from the Pine lands of that state have been most disgraceful, and we may well credit the stories that some of the fires that have devastated the forests there were kindled by men who wished to burn up the proofs of their robbery. We read of state officials who have sold stumpage at $2.00 a thousand, when it was worth at least $4.00, and even at that rate more than twice as much timber was often cut as was reported. The people have at last become aroused, and in the proceedings instituted by the state several convictions have been made, and it looks as if further investigation and prosecution might return a large amount of money to the treasury of the state. Our wasteful methods of timber-cutting are bad enough when at their best, but the devastation would naturally be much more sweeping when the trees are cut by thieves who are anxious to obliterate the traces of their crimes.

In an address delivered by James W. Bentley, the Secretary of the National Tulip Society of England, it is said that before this flower was introduced into western Europe in 1550 the Turks had already many varieties of Tulips, as seems to be proved by an extract from Hackluyt's *Voyages*. It was first planted in England in 1577, and Parkinson enumerated one hundred and fifty varieties as early as 1629. In 1665 a catalogue of one hundred and eighty-four varieties appeared in a work published by John Ray, and in a second edition of the work ten years later the list was increased to three hundred varieties. An amusing paper by Sir Richard Steele in the *Tatler* of 1710 ridicules some of the high-sounding names which florists gave their Tulips in that early day. But the names he laughs at, like Black Prince, Duke of Marlborough and Alexander the Great, are brief and modest compared to many of those with which the garden-flowers at the present time are burdened.

A late number of the *Pacific Rural Press* gives pictures of the flowers of two hybrid Clematises which Mr. Luther Burbank has produced. The first was originated by crossing the pollen of the coral-colored flowers of Clematis coccinea upon the purple bell-shaped flowers of C. crispa. The result is a vigorous plant, which produces flowers continuously from June until autumn. Most of these are broadly bell-shaped, and from the picture they seem to be larger than those of C. crispa and have a beautiful frosted appearance. The color of the flower is not stated, but it is said to be a mingling of that of the two parents, but one can hardly conceive what color blue and scarlet would produce. The other one is the picture of a large double white flower, which is said to be a product of plants of the Jackmanni and Lanuginosa type. The flowers are of the largest size, very double, white, variegated with light blue, and their soft, feathery look, added to a rare symmetry of form, seems to make this a plant of great promise.

The new crop of many foreign and domestic nuts has been coming in during the last fortnight, and English walnuts, from Chili, are now succeeded by the Naples and California product, the first car-load of these California nuts having arrived last Friday, two weeks after the first arrival from Italy. The market season for Chili nuts begins here in early summer. The poor quality of these nuts last year forced down prices at the beginning of this season, when they brought only five and a half cents a pound. This year's crop has proved to be of really good quality, and those yet in stock now command seven cents. California walnuts are of good size and quality, but are bleached by a sulphur process which whitens the shell and makes them much more showy than the imported nuts. This bleaching is not encouraged by the best eastern dealers, who claim that it injures the meat of the nut, while it also increases expense. The cost of transportation and loss by shrinkage on nuts brought from California amounts to two cents a pound, and even nine cents is not a paying price to the eastern wholesale dealer. At this figure sales here are slow and preference is given to the Naples walnuts, which now sell for ten cents a pound. All European crops of these nuts are short this year. Grenoble walnuts, the highest grade of all, are due here within a week, and eleven and a half cents is being asked by local dealers for advance orders. The crop of the so-called French walnuts, a lower grade, also from France, is almost a failure. Much of the home crop of England is used there for pickling, and many more are imported to meet the demand for table use. A few English filberts are seen here every fall in the highest-class fruit-stores; two lots, amounting to nearly five hundred pounds, have been sold this month at the high price of thirty cents a pound by the importers, and as many more will probably constitute the entire receipts. These nuts are not kiln-dried, but come green in the husk. A small filbert from Barcelona formerly came to America in considerable quantities, but these now go to the English markets. The Sicily nut is the standard filbert here, and the sort known in the trade as the Long Naples is also a favorite; the latter now sell for nine and a half cents in their original packages, while those from Sicily are but six cents a pound. For twenty years the showy Spanish Taragonas have been the most popular almonds, but the Princess Paper-shell, from France, is rapidly regaining the place in popular favor which it held a quarter of a century ago. Of the French almonds the Languedoc is the best. California Paper-shell almonds are now bringing the highest wholesale prices of twelve cents a pound. The choicest of all shelled almonds, for confectioners' use, as for the table, are the Jordan almonds, from Spain. Their shell is smooth and very hard, but the meats are long and slender and altogether desirable. These now sell at retail for forty-five cents a pound, in pasteboard packages. Brazil nuts, or Cream nuts, are among the most plentiful this year, and the shipments which began in March are still continuing. These can now be bought in large lots as low as three and three-quarter cents a pound, but the holiday trade is likely to make better prices, as in other years, when a rise from five and a half to fifteen cents has taken place in a few weeks before Christmas. The so-called Paradise nut, or Sapucaia nut, also from South America, is more rare, and the first lot seen in many years was sent to this city last fall. They are more delicate than the Brazil nut, which they resemble somewhat in appearance. They are said to keep well for years. They command thirty cents a pound at wholesale. Among the rarer foreign nuts are Pistachios, which are imported directly by dealers in confectioners' supplies, and are used for coloring confectionery and ices, and the so-called Litchi or Lyche nut, which is really not a nut, but the fruit of a tree native in southern China—Nephelium Litchi. When dry it becomes nut-like, with a rough, but fragile, shell, and contains an aromatic pulp. This fruit is exclusively imported by Chinese merchants.